EXPANDED SITE INSPECTION WORK PLAN
for the
Rt. 7 DUMP/NEW JERSEY FIREWORKS SITE

May 2004

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EXPANDED SITE INSPECTION SAMPLING PLAN
FOR THE
ROUTE 7 DUMP/NEW JERSEY FIREWORKS SITE (MD-075)

Elkton, Maryland

2004

Prepared by: Maryland Department of the Environment
Waste Management Administration
Federal Superfund Division
71800 Washington Blvd.
Baltimore, Maryland 21230

Prepared for: U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

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1.0 INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986, the Maryland Department of the Environment (MDE), Waste Management Administration will conduct an Expanded Site Inspection (ESI) at the Rt. 7 Chemical Dump (MD-075), Environmental Protection Agency (EPA) identification number MDD980692479. Included with this investigation is the area around the sparkler manufacturing building on the easternmost side of the adjacent New Jersey Fireworks site. The purpose of the ESI is to characterize potential impacts from disposal activities at the former dump known as the Rt. 7 Chemical Dump and the area around the sparkler building on the adjacent New Jersey Fireworks property on groundwater, surface water, soil and sediment in the vicinity. The scope of the investigation will include collecting samples of on-site soil, groundwater, surface water and sediment, as well as collecting off-site soil, surface water and sediment to determine if hazardous wastes have impacted the properties and vicinity.

This sampling proposal is submitted to the EPA by the MDE's Environmental Restoration and Redevelopment Program, Federal Superfund Division.

2.0 PREVIOUS INVESTIGATIONS

On November 17, 1971, a Maryland Water Resources Administration (WRA) official discovered that New Jersey Fireworks was discharging wastewater, which contained barium salts, from its sparkler mixing area to an unnamed tributary of Mill Creek. As a result, on December 22, 1971, the WRA issued an order for New Jersey Fireworks to stop discharging to the creek and arrive at an approved treatment and disposal method, which would prevent discharge to the creek exceeding 1 mg/l barium.

According to MDE file records, in 1978 New Jersey Fireworks was cited by WRA for unpermitted disposal of their fireworks waste into the water-filled quarry located on the extreme western portion of the property now known as the Rt. 7 Chemical Dump. In addition to potential groundwater impact, another concern of the State was that some water from the quarry was escaping into the stream. Sampling by the State around that time indicated that elevated levels of barium were detected in the quarry/pond. Due to the State's concerns, there is some indication in the files that plant personnel had begun removing some waste from the quarry, burning it at the adjacent burning area, and taking the ash to the County Landfill; however, later documents suggest that the improper disposal into the quarry continued. In November 1980, an Administrative Order was issued to the company by the Department of Health and Mental Hygiene (DHMH). The Order required that New Jersey Fireworks close out the dump area in order to protect human health and the environment.

The State of Maryland conducted a Preliminary Assessment and Ecology & Environment conducted a sampling of the Rt. 7 Chemical Dump in 1980, at which time results indicated contamination of the on-site ponded area. No other details were given other than the contamination had not migrated off-site.

In December 1983, the EPA (NUS Halliburton) conducted a Site Inspection of the Rt. 7 Chemical Dump that included collecting samples from on-site surface waters and an adjacent stream. Lead detected in upstream and downstream aqueous samples was determined to be unrelated to the site. Only butyl benzyl phthalate (15 parts per billion [ppb]) was detected in aqueous samples, and it was determined to pose no evident hazard. A high concentration of barium (19,300 ppb) was detected in the on-site pond aqueous sample, but no barium was detected off-site. Trace amounts of cadmium, cobalt, and chromium were also detected.

In June 1992, the MDE submitted a Level I Hazard Ranking System score on the dump site to EPA, and reported that New Jersey Fireworks Company still owned the site, and confirmed that the State Highway Administration disposed of fill dirt from road construction in the on-site pond from 1983 to 1986. MDE recommended considering the site for No Further Remedial Action Planned (NFRAP) under CERCLA.

In September 1992, MDE submitted to EPA a revised Level I Site Investigation Prioritization (SIP) on the Rt. 7 Chemical Dump, which recommended a NFRAP status for the site, based on existing analytical data.

In 1999, the New Jersey Fireworks site (the eastern portion of the property) was inspected by the Federal Bureau of Alcohol, Tobacco, and Firearms (ATF) and the MDE. The inspection revealed that large amounts of fireworks were being stored in an unsafe manner. According to representatives of the ATF, the on-site manufacturing of fireworks ceased in approximately 1991. The types of fireworks previously manufactured include sparklers and black powder explosives. The property at the time was being used to repackage imported fireworks.

The 1999 ATF/MDE inspection also revealed that several buildings on site contained old fireworks. Many of these buildings were in poor condition. Several pit-like depressions were located in a wooded area and were previously used for burning and disposal of old fireworks. Rusted 30-gallon and 50-gallon drums littered the site. Some of the drums still possessed legible labels indicating that they contained potassium perchlorate. Lastly, a waste disposal area was observed on the south side of the property, which consisted of wooden pallets, drums, aerosol cans, oil containers, auto parts, cinders and other scattered debris, some of which looked like asbestos material.

The MDE conducted a Site Investigation focused on the New Jersey Fireworks portion of the property in April 2000. Surface and subsurface soil, groundwater, surface water and sediment samples were collected and analyzed for a full scan of all Target Analyte List and Target Compound List pollutants. Results of the chemical analyses revealed only metals at levels above benchmark levels. Analysis of select samples failed to reveal the presence of perchlorates. The toxicological evaluation revealed unacceptable risk from ingestion of surface soil and groundwater, and dermal contact with groundwater beneath the site due to metals contamination.

In October 2001, MDE met with New Jersey Fireworks representatives and it was determined that MDE would collect soil samples to further characterize the burn pit area and

areas near the buildings and trailers that still contained potentially hazardous wastes. Results from the field screening conducted on December 21, 2001 revealed elevated levels of antimony at the entrance of two of the buildings.

On March 1, 2002, MDE collected additional field screening samples approximately 10' to 20' from the building entrances to determine if metals contamination was restricted to those areas. An area devoid of vegetation near the former sparkler manufacturing building was sampled and elevated levels of barium (35,400 parts per million [ppm] and 39,300 ppm) were detected.

On May 2, 2003 the Waste Management Administration became involved with a developing perchlorate problem in the groundwater impacting the Elkton well field. In response to known perchlorate contamination of groundwater at the nearby ATK (formerly Morton Thiokol) MD-100 CERCLA site, MDE's Water Management Administration assessed nearby community wells. Chemical analysis of samples collected from two operational wells revealed perchlorate contamination at 5 ppb and 0 ppb. Two additional wells considered for planned expansion were sampled and their results detected perchlorates at 28 ppb and 3 ppb.

3.0 SITE DESCRIPTION

The Rt. 7 Dump/New Jersey Fireworks site (the "Site") is located approximately 2.4 miles west of Elkton and 2.5 miles east of the town of North East in Cecil County, Maryland. The Site consists of three parcels that comprise approximately 63.7 acres and is situated in a rural area just north of the Elk Neck State Forest. A residence located at 1720 Old Philadelphia Road and Old Philadelphia Road (Route 7) form the northern border of the site. The Forest View Village Trailer Park borders the site to the east. Mill Creek and Amtrak railroad tracks form the southern border of the site (Figure 1). Residences and a septic tank cleaning business in situated to the west.

The Site ranges from approximately 25 feet to 75 feet above Mean Sea Level and gently slopes to the south towards Mill Creek. The western portion of the Site (Rt. 7 Dump) consists of a former clay quarry filled with demolition and construction debris disposed by the State Highway Administration during the early 1980s. This former disposal area/pond contains a shallow pool of surface water < 1 foot deep and approximately 20 feet in diameter. The eastern portion of the site (New Jersey Fireworks sparkler building) is open and contains several widely spaced warehouse buildings while the central portion of the site is wooded. The roads on the New Jersey portion of the Site are unimproved and the easternmost portion of the Site is fenced and access is restricted by a locked gate. The Rt. 7 Dump area is also fenced. The Amtrak railroad and Mill Creek act as a natural barrier to the site along the southern border.

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Figure 1: Topographic Map

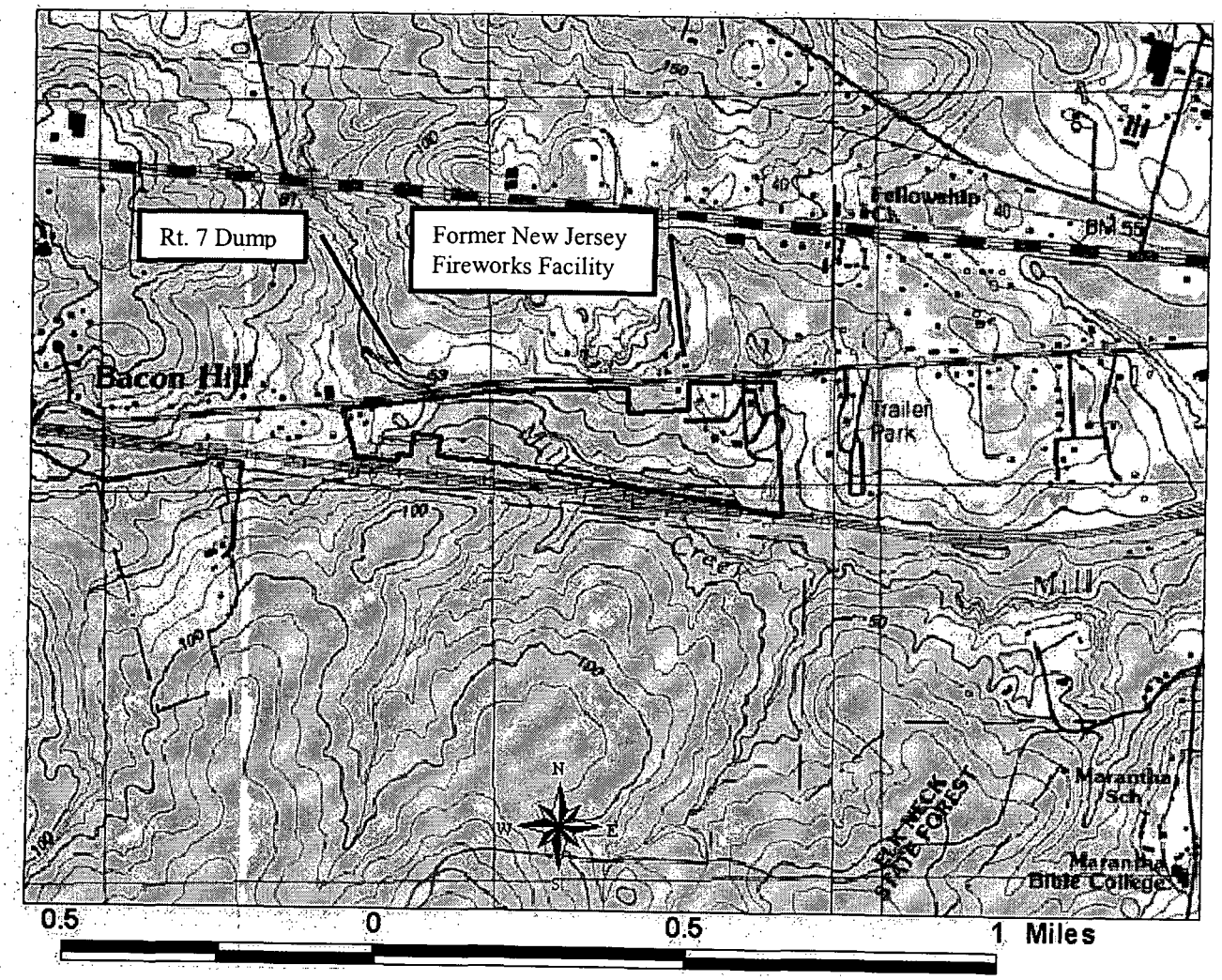
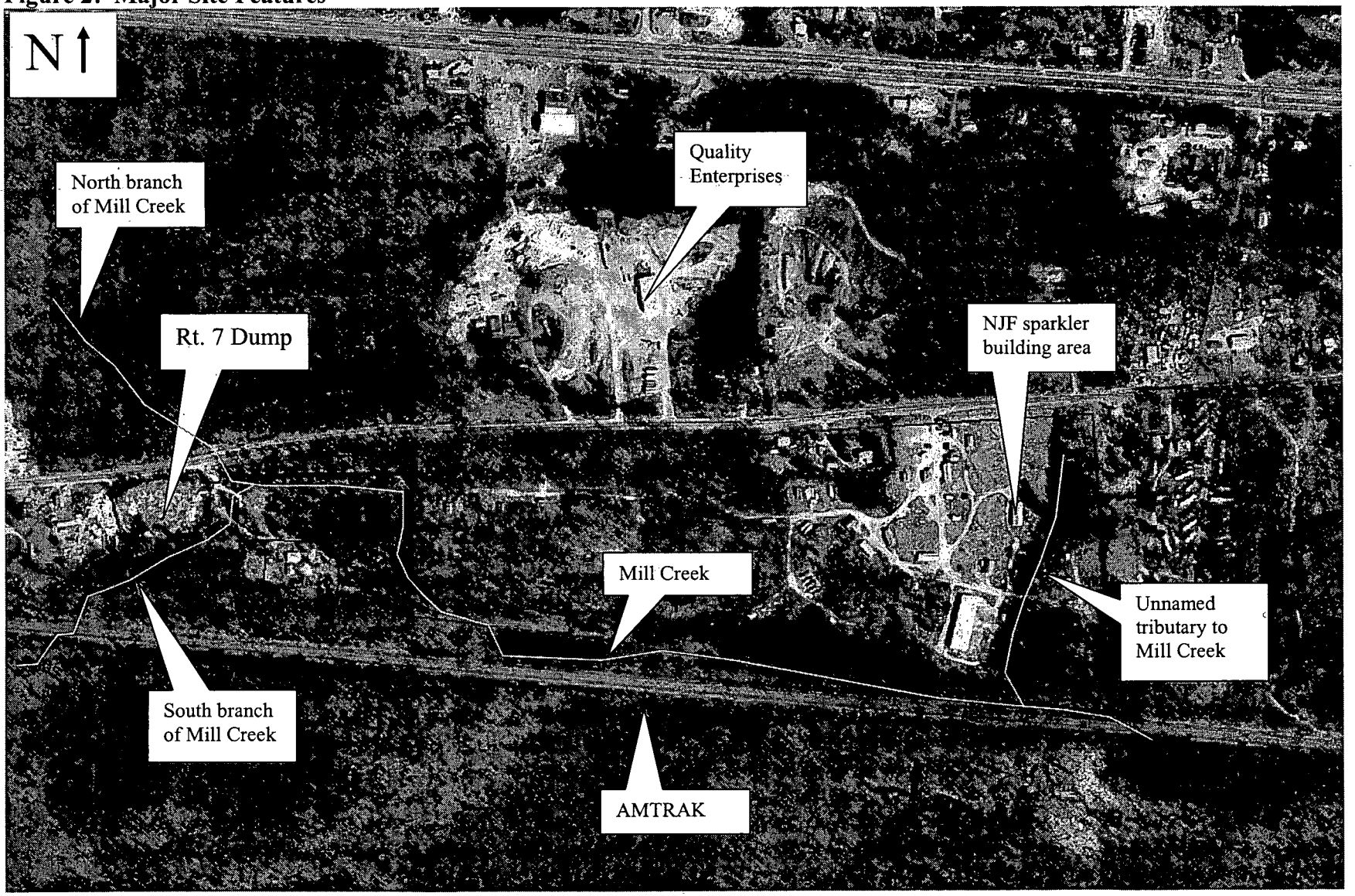


Figure 2: Major Site Features



4.0 SAMPLE COLLECTION PROPOSAL

The scope of this ESI will evaluate potential impacts from operations at the former disposal area (Rt. 7 Dump) and the sparkler building area on the New Jersey Fireworks site on the soil, groundwater, surface water and sediments on and off site. Samples will be collected and submitted for analysis in accordance with the EPA's Contract Laboratory Program (CLP) Routine Analytic Services. Because the previous investigations as summarized in Section **2.0**, revealed only inorganic contamination above benchmark levels and some low level organic contamination, all samples (solid matrix and aqueous matrix) collected for this ESI will be analyzed for Target Analyte List (TAL) inorganics, Target Compound List (TCL) semivolatile organic compounds (SVOCs) and pesticides. Additionally, surface and subsurface soil samples will be analyzed for TCL volatile organics (VOCs). Since previous investigations failed to reveal detectable levels of VOCs in the aqueous samples and polychlorinated biphenyls (PCBs) in any of the samples, aqueous samples collected during this ESI will not be analyzed for VOCs and no samples will be analyzed for PCBs. Due to the recent discovery of perchlorate contamination in the groundwater on site and in the vicinity, Special Analytical Services will be requested for perchlorate analyses in all aqueous samples using EPA method 314 and all solid samples using EPA method 9058. A summary of the analytical parameters and the number of samples collected for each parameter is outlined in Table 1. The samples will be collected in five sample matrices: 1) organic aqueous, (2) organic solid, (3) inorganic aqueous and (4) inorganic solid and (5) dissolved metals in groundwater. CLP protocol will be followed throughout the sample collection and submittal process (U.S. EPA, "Users Guide to CLP" December 1988) for those samples that apply. The quality control used by MDE includes the submittal of a field duplicate for each matrix, as defined above. In addition, a solid and aqueous matrix spike sample will be collected at specified additional volumes for CLP matrix spike quality control procedures. A sample summary is outlined in Table 2.

The field blank will consist of deionized water provided by the DHMH laboratory. The field blank will be transported in the field the day of sample collection and transferred to the appropriate sample containers. Aqueous volatile organic compound analysis (VOA) trip blank samples will be included with each day's organic shipment. The trip blank consists of deionized water fixed with HCl, and contained in VOA sample containers.

4.1 Groundwater Samples

For this ESI a total of seven 2" monitoring wells will be installed in the vicinity of the study area. Clustered shallow (approximately 20' below ground surface [bgs]) and a deep (approximately 90' bgs) monitoring wells will be installed near the former Rt. 7 Dump. These wells will be designated as MW-1 for the shallow well sample and MW-1A for the deep well sample. Clustered shallow (20' bgs) and deep (60' bgs) monitoring wells will be installed on the New Jersey Fireworks property east of the former sparkler building and designated as MW-2 and MW-2A. Clustered shallow (60' bgs) and deep (120' bgs) monitoring wells will be installed on the Quality Enterprises, Inc. property located immediately north of the New Jersey Fireworks property and will be designated as MW-3 and MW-3A. Also, a shallow (60' bgs) monitoring well will be installed near the center of the Sherwood Homes Mobile Home Park west of the New Jersey Fireworks sparkler building and will be designated as MW-4. The groundwater grab samples collected from these wells will be designated from the well with which they were collected. A groundwater sample will be collected from the existing 50' production well located near the center of the New Jersey

Fireworks former production area and be designated as PW-5 and serve as the aqueous matrix spike. Additionally, a groundwater sample will be collected from the water table at the Rt. 7 Dump area and at the New Jersey Fireworks sparkler building area via direct push (Geoprobe®) technology. These water table grab samples will be designated as GW-1 (Rt. 7 Dump) and GW-2 (sparkler building area). GW-3 will serve as an aqueous matrix duplicate of MW-2. The dissolved matrix ground water samples (field filtered) will be identified with a DM suffix (i.e. GW-1DM). Refer to Table 2 and Figure 3.

4.2 Surface Water and Sediment Samples

For this ESI a total of nine surface water samples plus one duplicate will be collected and designated as SW-#. SW-1 will be collected immediately north of the bridge on Rt. 7 that crosses the north branch of Mill Creek and serve as the background sample for the northern branch of Mill Creek. SW-2 will be collected upstream form the Rt. 7 Dump from the south branch of Mill Creek and serve as the background for the southern branch of Mill Creek. SW-3 will be collected from the south branch of Mill Creek near the southwestern corner of the Rt. 7 Dump, the probable point of entry (PPE) into Mill Creek. SW-4 will be collected from Mill Creek on the western portion of the New Jersey Fireworks property ≥0.1 mile downstream from the Rt. 7 Dump PPE. SW-5 will be collected upstream from the potentially impacted portion of the unnamed tributary to Mill Creek adjacent to the sparkler building area and serve as the background for that body of water. SW-6 will be collected from the unnamed tributary at the sparkler building PPE. SW-7 will be collected from a point ≥0.1 mile downstream from the sparkler building PPE. SW-8 will be collected from Mill Creek immediately upstream from the confluence of the unnamed tributary to determine if impacts to Mill Creek have occurred upstream from this confluence. SW-9 will be collected from the standing water in the former pond area of the Rt. 7 Dump. SW-10 will be collected with SW-8 and serve as the aqueous matrix duplicate. The dissolved matrix samples (field filtered) will be identified with a DM suffix (i.e. SW-1DM). The remaining SW-# designations will serve as additional CLP quality control/quality assurance samples and they are as follows: SW-11 and SW-12, first day trip blank and field blank; SW-13 ad SW-14, second day trip blank and field blank. A total of eight sediment samples will be collected concurrently with the surface water samples (except for SW-9 due to lack of sediment) and be designated as SED-# (Table 2, Figures 2 and 3).

4.3 Soil Samples

A total of nine surface soil grab samples (0-1' bgs) plus one duplicate and eight subsurface soil grab samples (4'-6' bgs) plus one duplicate are proposed to be collected from the Site with direct push (Geoprobe®) technology and handled under CLP protocol. The surface soil samples collected for perchlorate analysis will be collected from at least one foot bgs due to the degradation effects on perchlorates from exposure to sunlight. Four locations will be sampled around the Rt. 7 Dump and four locations will be sampled in the vicinity of the sparkler building. One location will be sampled in the interior portion of the New Jersey Fireworks portion of the Site away from likely impacts from former operations and will serve as the soil background. The surface soil samples collected near the Rt. 7 Dump will be designated as S-11 through S-14 and the subsurface soil samples will be designated as SS-11 through SS-14. S-15 will be collected with S-11 as serve as a soil matrix duplicate. S-16 will be collect from the interior of the New Jersey Fireworks property and serve as the soil background. The surface soil samples collected in the vicinity of the sparkler building will be designated as S-21 through S-24 (solid matrix spike) and the subsurface soil

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samples will be designated as SS-21 through SS-24. SS-25 will be collected with SS-21 as serve the second soil matrix duplicate (Table 2 and Figure 4).

Table 1: Analytical Parameters Table

Number of Samples	Matrix	Analytical Parameter	Analytical Method	Container	Preser-vative	Detection Limit	Maximum Holding Time
27	Soil /Sediment	TCL VOCs	CLP SOW OLM04.3	Two Encore samples and one 2-oz, CWM	ICE	CRQL	14 days
27	Soil /Sediment	TCL SVOCs & Pest/PCBs *Note: PCBs will not be analyzed*	CLP SOW OLM04.3	One 8-oz, CWM	Ice	CRQL	7days to extraction, 40 days to analysis
27	Soil /Sediment	Metals and Cyanide	CLP SOW ILM05.3	One 8-oz, CWM	ICE	CRDL	180 days for all metals (except mercury – 28 days: cyanide 12 - days)
27	Soil /Sediment	Perchlorate	SW-846 method 9058	One 4-oz Teflon-lined septa amber wide mouth jar	Ice	CRQL	28 days
2	Water	TCL VOCs	CLP SOW OLM04.3	Three 40-ml, VOC vials	HCL to pH<2; Ice	CRQL	14 days
23	Water	TCL SVOCs & Pest/PCBs *Note: PCBs will not be analyzed*	CLP SOW OLM04.3	Four 1-L amber bottles	Ice	CRQL	PCBs – 7 days to extraction. 40 days to analysis
44	Water	TAL metals	CLP SOW ILM05.3	One 1-L poly bottle	HNO_3; ice	CRDL	180 days for all metals (except mercury – 28 days)
23	Water	Cyanide	CLP SOW ILM05.3	One 1-L, poly bottle	NaOH; ice	CRDL	12 days
23	Water	Perchlorate	SW-846 method 314	One 1-L amber bottle	Ice	CRQL	28 days

QA/QC samples will require additional containers

CLP =Contract Laboratory
CWM =Clear, wide mouth glass jar
CRDL =Contract required detection limit
CRQL =Contract-required quantitation limit
OLM =Organic low to medium
ILM =Inorganic low to medium
HCL =Hydrochloric acid
HNO3 =Nitric acid
µg/m3 =Micrograms per cubic meter
NaOH =Sodium hydroxide
Oz =ounce
PAH =Polycyclic aromatic hydrocarbons
Pest =Pesticides
PCB =Polycyclic biphenyl
L =Liter
mL =milliliter
Poly =polypropylene
SOW =Statement of Work
SVOC =Semi-volatile organic compound
TAL =Target analyte list
TCL =Target compound list
VOC =Volatile organic compound

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Table 2: Sample Summary Table

SAMPLES			Rationale
TYPE	ID#		
Surface and Sub-Surface Soil	S-11/SS-11		Characterize potentially impacted soil near the Rt. 7 Dump.
	S-12/SS-12		Characterize potentially impacted soil near the Rt. 7 Dump.
	S-13/SS-13		Characterize potentially impacted soil near the Rt. 7 Dump.
	S-14/SS-14		Characterize potentially impacted near the Rt. 7 Dump.
	S-15		*Soil matrix duplicate of S-11*
	S-16		Background soil sample to be collected east of the Rt. 7 Dump.
	S-21/SS-21		Characterize potentially impacted soil near the NJF sparkler building.
	S-22/SS-22		Characterize potentially impacted soil near the NJF sparkler building.
	S-23/SS-23		Characterize potentially impacted soil near the NJF sparkler building..
	S-24/SS-24		Characterize potentially impacted soil near the sparkler building and solid matrix spike.
	SS-25		*Soil matrix duplicate of SS-21.*
Surface Water and Sediment	SW-1	SED-1	Surface water sediment background collected from north branch of Mill Creek immediately north of Rt. 7.
	SW-2	SED-2	Surface water sediment background collected from south branch of Mill Creek upstream from the Rt. 7 Dump..
	SW-3	SED-3	Characterize the PPE into Mill Creek from the Rt. 7 Dump.
	SW-4	SED-4	Characterize the surface water and sediment at least 0.1 mile downstream from the PPE.
	SW-5	SED-5	Surface water sediment background upstream from the sparkler building area.
	SW-6	SED-6	Characterize the PPE into the unnamed tributary near the sparkler building.
	SW-7	SED-7	Characterize the surface water and sediment at least 0.1 mile downstream from the PPE.
	SW-8	SED-8	Characterize Mill Creek immediately upstream from the confluence of the unnamed tributary that flows near the sparkler building area.
	SW-9		Characterize the standing water on the Rt. 7 Dump.
	SW-10		***Aqueous matrix duplicate of SW-8.***
	SW-11		***Trip blank for day 1.***
	SW-12		***Field blank for day 1.***
	SW-13		***Second day trip blank.***
	SW-14		***Second day field blank.***
Groundwater	MW-1	MW-1A	Characterize the groundwater near the Rt. 7 Dump..
	MW-2	MW-2A	Characterize the groundwater near the NJF sparkler building.
	MW-3	MW-3A	Characterize the groundwater immediately north of the study area.
	MW-4		Characterize the groundwater potentially migrating off site to the east.
	PW-5		Characterize the groundwater near the NJF production well and aqueous matrix spike.
	GW-1		Characterize the groundwater at the water table near the Rt. 7 Dump.
	GW-2		Characterize the groundwater at the water table near the sparkler building area.
	GW-3		*Aqueous matrix duplicate of MW-2.*

Figure 3: Proposed Aqueous and Sediment Sampling Locations

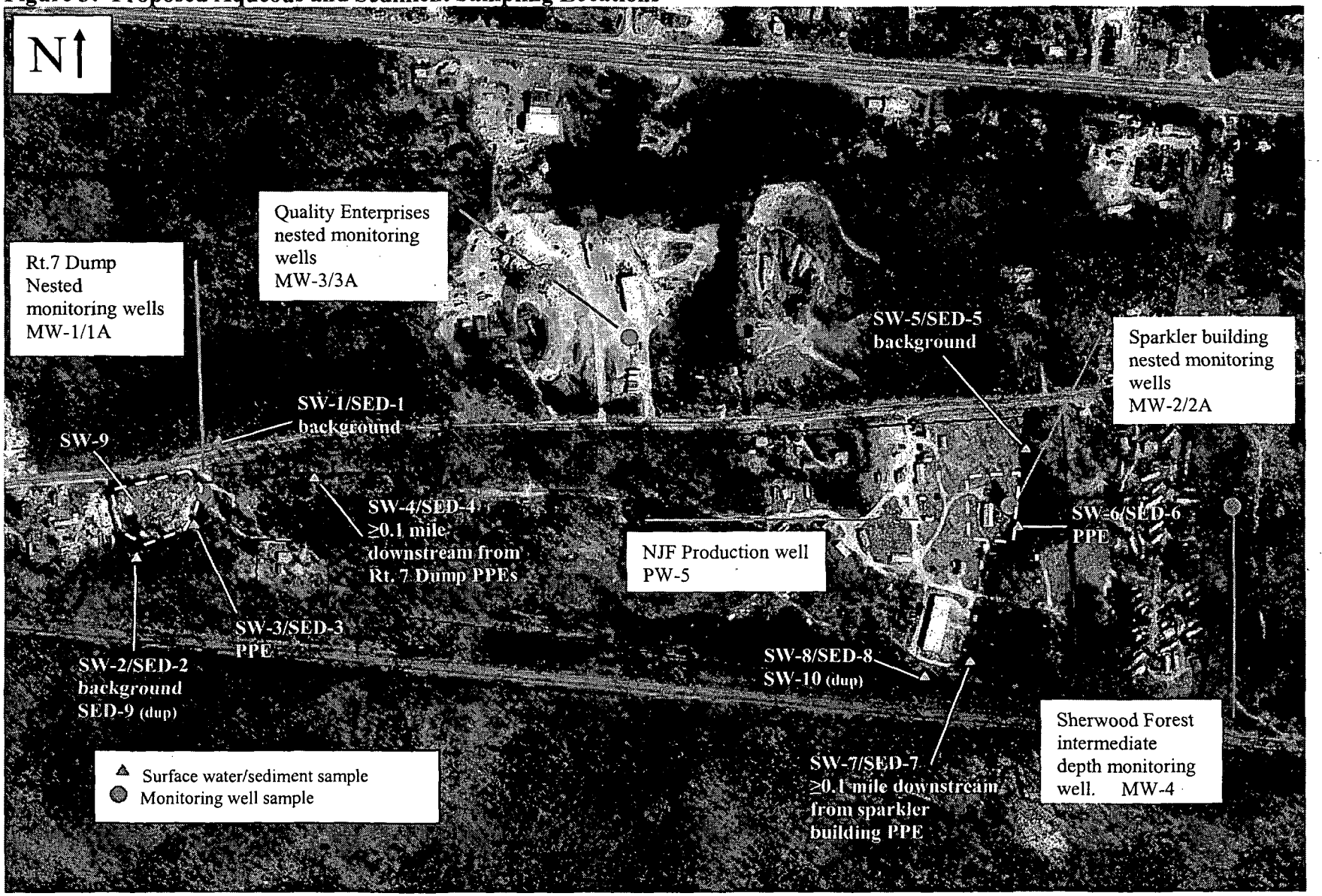
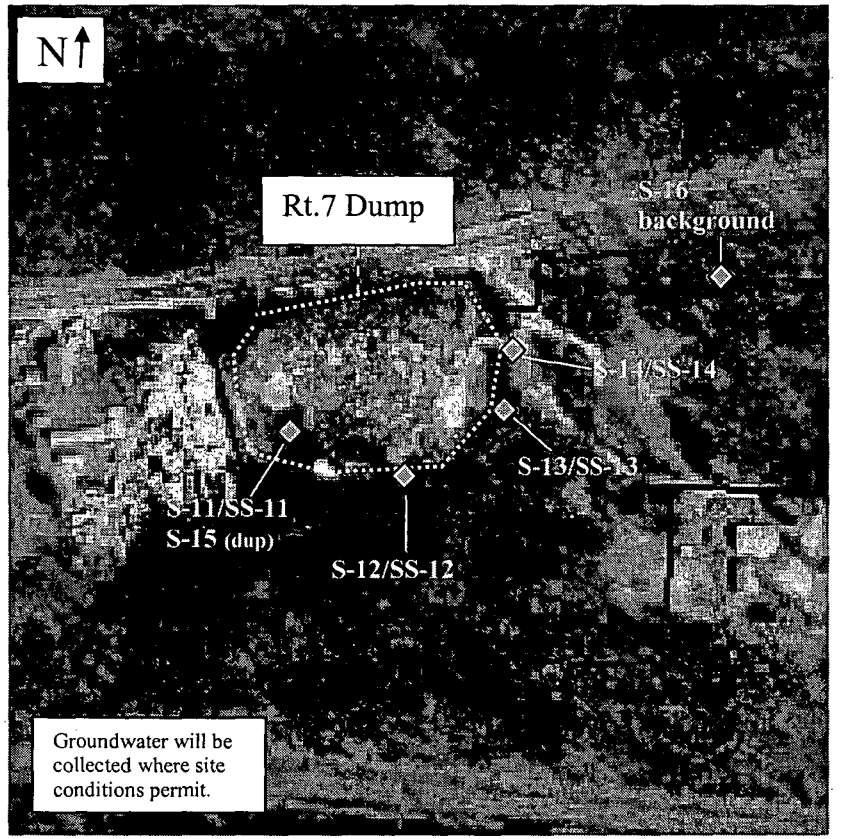
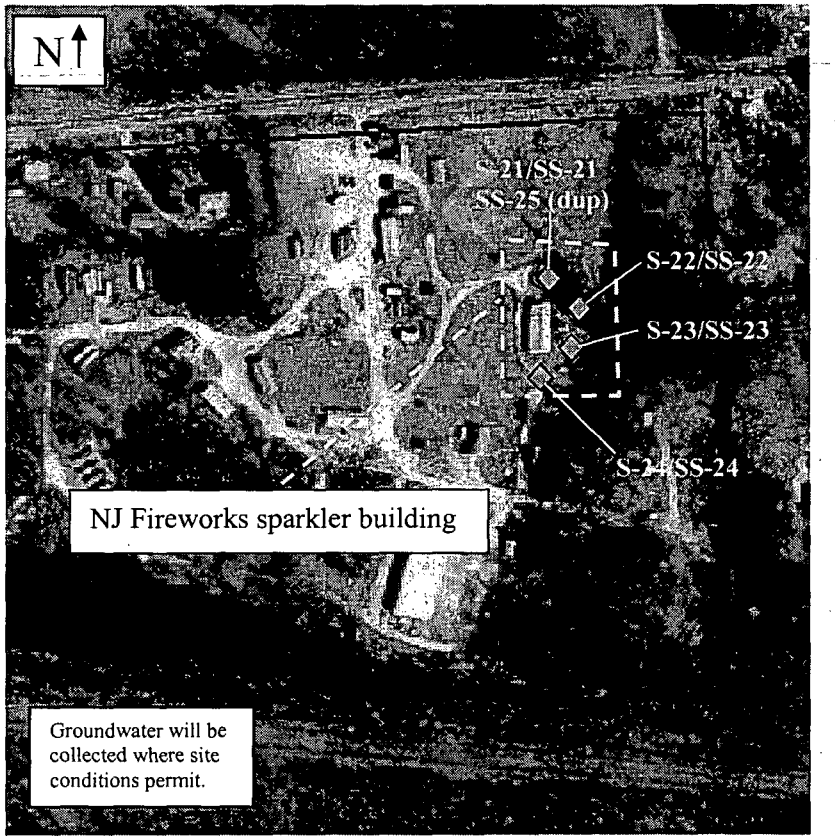


Figure 4: Proposed Soil Sampling Locations





5.0 INVESTIGATION-DERIVED MEDIA PLAN

All decontamination waste water will be disposed of on the site premises and all cuttings from soil borings will be returned to their point of origin. Purge water from monitoring wells will be discharged onto the ground through a vessel containing activated granular carbon.

6.0 PROJECT MANAGEMENT

Project Manager: Phillip Anderson CLP: Peggy Smith
Safety Officer: TBA Project Geologist: Dixon Wood
Samplers: TBA

7.0 FIELD EQUIPMENT

The sampling will be conducted according to the Standard Operating Procedures for Field Operations located in Appendix B. A list of the equipment that will be needed for sampling at the Rt. 7 Dump site is located at the end of Appendix B.

8.0 COMMUNITY RELATIONS

Routine site related activities will be handled by the Project Manager. The Environmental Restoration and Redevelopment Program's management will address more complex issues.

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APPENDIX A SITE SAFETY PLAN

1.0 SITE DESCRIPTION

1.1 Site Name and Address: Rt. 7 Dump/New Jersey Fireworks (MD-075)
South southeast of Old Philadelphia Road
Elkton, MD

1.2 Site Number: MD-075

1.3 Dates Planned On-Site: TBA

1.4 Hazards Present or Suspected: Unknown other than slip, trip and fall.

1.5 Total Area of Site: 63.73 acres

1.6 Area Being Studied: approximately 4 acres

1.7 Surrounding Population:

On-Site:	0
0 - 1/4 Mile:	88
1/4 - 1/2 Mile:	186
1/2 - 1 Mile:	634

1.8 Topography of Site:
The site is generally flat over the New Jersey Fireworks portion of the site and gently slopes southeast towards Mill Creek.

1.9.1 Weather Conditions and Forecast: TBA

1.10 Site Access Maps:

Topographic Map:	Refer to figure 1 of the sampling plan.
Site/Sampling Sketch:	Refer to figures 2 and 3 of the sampling plan.

2.0 ENTRY OBJECTIVES

The purpose(s) of this site entry are:

X to identify the suspected contamination of groundwater, surface water, sediment and soil in the vicinity of the site.

X to determine the degree of contamination of groundwater, surface water, sediment and soil in vicinity of the site.

The following number of samples will be collected:

19 Soil Samples
__ Soil Gas Samples
2 On-site Groundwater Samples
1 Production Well Water Samples

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4 Monitoring Well Water Samples
0 Residential Well Water Samples in the Vicinity
10 Surface Water Samples
8 Sediment Samples
__ Air Samples
__ Container Samples
__Leachate

3.0 ON-SITE ORGANIZATION AND COORDINATION

3.1 MDE Reps:

Contact:

Kim Lemaster, Division Chief
1800 Washington Blvd.
Baltimore, Maryland 21230

410-537-3440

Bill Schmidt, Eastern Shore Regional Chief
Centreville Field Office Room202
120 Broadway
Centreville, MD 21617
410-819-4060

The following personnel are designated to carry out the stated job functions on-site. One person may carry out more than one job function. In case of absence of personnel, the alternative will be designated by the Project Manager and/or authorized personnel.

JOB FUNCTION	NAME	WORK PHONE
Project Manager	Phill Anderson	410-537-3448
Site Safety Officer	TBA	
Field Quality Assurance Officer	Peggy Smith	
Site Geologist	Dixon Wood	
Sampling Team	TBA	
Drilling Team	TBA	

AGENCY	NAME	PHONE
FEDERAL AGENCY REPS:		
EPA	Lorie Baker	(215) 814-3355
LOCAL AGENCY REPS:	*TBA*	
OTHER STATE REPS:	Emergency Response	(866) 633-4686
OTHER REPS:	*TBA*	

4.0 ON-SITE WORK PLAN

The following on-site tasks will be performed by the designated personnel: *TBA*

TASK	TEAM MEMBERS
Decontamination Zone Setup	
Decontamination Team	

Grid System Setup
On-Site Well Sampling
Soil Sampling
Well Sampling
Surface Water/Sediment
Air Sampling
Water Level Measuring/Well Purging

5.0 SITE CONTROL - WORK ZONES

The following personnel have been designated to coordinate access control and security on-site: *TBA*

In order to prevent or reduce the migration of contaminants controlled work zones and control points should be set up and marked. Work zones include the Exclusion Zone (hot zone), Contamination Reduction Zone (decon zone), and Support Zone (clean zone). No unauthorized person should be within these areas. Command Post (support zone) should be located upwind from the Exclusion Zone. The control boundaries and access control points into each zone will be marked and made known to all personnel during daily briefing. The work zone is sketched below:

**Sampling events at the Rt. 7 Dump/New Jersey Fireworks site will be initiated in level "D" protective wear. The work zones as indicated above are not applicable for this phase of work to be completed.*

6.0 SAFETY AND SPECIAL TRAINING REQUIRED

All personnel permitted in areas requiring personnel protective equipment and clothing (the hot zone and decontamination zone) must have, as a minimum requirement, attended EPA's Personnel Protection and Safety training course (165-2) or equivalent (165-5). A safety and task briefing meeting will be conducted each day before site entry. The safety procedures, evacuation procedures, escape procedures, as well as the day's planned activities will be discussed.

7.0 HAZARD EVALUATION

7.1 Primary Hazards

The following substance(s) are known or suspected to be on-site:

Specific substances and their concentrations are not known at this time.

7.2 Additional Hazards

The following additional hazards are expected on-site: *Unknown*

8.0 PERSONNEL PROTECTION EQUIPMENT

Based on evaluation of potential hazards, the ESI will be conducted in Level D.

LEVEL D

Coveralls*

Gloves*
Boots/Shoes, leather or chemical-resistant, steel toe and shank
Safety glasses or chemical-splash goggles*
Hard hat (face shield)*
Disposable boot covers*
Escape mask*
(*) OPTIONAL

9.0 MONITORING

9.1 Environmental Monitoring

The following environmental monitoring instruments shall be used on-site (circle when applicable) at the specified intervals.

INSTRUMENT	FREQUENCY	
Metal Detector	continuous/hourly/daily/other	
HNU/OVA	continuous/hourly/daily/other	Microtip

*Microtip to be used on an as needed basis and for soil samples.
Radiation Detector Equipment:
Mini Alert Monitor 4
Personal Radiation Monitor **BADGES**

10.0 COMMUNICATION PROCEDURES

10.1 Hand Signals

The following standard hand signals will be used in case of radio communication failure:

HAND SIGNALS	INDICATIONS
Hand gripping throat	Out of air, can't breathe
Pat on partner's shoulders	Leave area immediately
Both hands around waist	Leave area immediately
Grip partner's wrist	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	OK, I am alright, I understand
Thumbs down	No, negative

*Communication at the Rt. 7 Dump/New Jersey Fireworks site will be done through verbal contact and hand-held two-way radios.

10.2 Location of Telephone

The location of on-site phone: *Mobile phone in sampling van.*
The location of the nearest off-site phone will be mentioned during briefing.

11.0 DECONTAMINATION PROCEDURES

Refer to Standard procedures for field operations in Appendix B.

12.0 EMERGENCY PLAN

12.1 Emergency Medical Facility

Medical Facility: Union Hospital of Cecil County
Address: 106 Bow Street
Elkton, MD
Phone Number: **(410) 398-4000**
Time Needed to Reach Facility: 15 minutes

Directions to Hospital from site: **Head east on Rt.7 towards Elkton for approximately 2 miles. Trun Right onto Rt. 40 east for 0.7 miles. Turn left onto Landing Lane. After 0.1 mile turn right onto West Main St. Proceed approximately 0.4 mile and turn left onto Bow St.**

Designated place for medical facility access map: Sampling Van:
Local ambulance available: Yes
Ambulance phone number: 911
Ambulance response time: Unknown

12.2 First Aid Equipment On Site

First-aid equipment is available on-site at the following locations:
First-Aid Kit: Sampling Van
Emergency Eye Wash: Sampling Van

12.3 Emergency Medical Information

Emergency medical information for substances present (from NIOSH Pocket Guide to Chemical Hazards):

12.4 Other Emergency Phone Number List

AGENCY/FACILITY	CONTACT	PHONE NUMBER
Police		911
Fire		911
Haz Mat Unit	MDE	(866) 633-4686
State Hazardous Material and Oil Response Unit	MDE	(866) 633-4686

13.0 EMERGENCY PROCEDURES

The following standard emergency procedures will be used by on-site staff who are also responsible for ensuring that the appropriate procedures are followed.

13.1 Personnel Injury.

Designated Emergency Signal: Verbal through radio communication or vehicle horn. Upon notification of an injury, the Project Manager and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the Site Safety Officer initiating the appropriate first aid and necessary follow-up as stated above. If the injury increases the risk of others, the designated emergency signal shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on-site will stop until the added risk is removed or minimized.

13.2 Fire or Explosion.

Designated Emergency Signal:

Upon notification of a fire or explosion on-site, the designated emergency signal shall be sounded and all site personnel assembled at the sampling van. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

13.3 Other Equipment Failure.

If any other equipment on-site fails to operate properly, the Project Manager and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on-site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall assemble at the sampling van until the situation is evaluated and appropriate actions taken. .

EMERGENCY PROCEDURES SUMMARY:

* Designated work zones are not applicable during this phase of the ESI, therefore emergency signals other than those indicated in section 10.1 and 10.2 have not been established. The primary means of communication on site will be through verbal contact.

ORIGINAL

SAFETY PLAN ACKNOWLEDGEMENT FORM

All site personnel and site visitors have read the above plan and are familiar with its provisions.

NAME	AGENCY	SIGNATURE

APPENDIX B STANDARD PROCEDURES FOR FIELD OPERATIONS

Physical Samples:

These operating procedures describe the standard methods utilized by the MDE's Waste Management Administration (WAS) for obtaining accurate and representative field samples from sites containing potentially hazardous materials/wastes.

The purpose of these operating procedures are to assure quality control in field operations and provide uniformity in technician field techniques.

All equipment utilized for sampling purposes will be cleaned and calibrated prior to utilization. Calibrations will be done in accordance with the manufacturer's specifications. Contaminated sample equipment will be decontaminated prior to exit from the contamination reduction zone. (See Standard Operation Procedure for Field Decontamination.)

Each site team will maintain a logbook detailing all information deemed pertinent to the investigation. Examples of pertinent information are as follows:

1. Date, times of arrivals and departure.
2. Project name and location.
3. Site personnel - team members and site coordinator.
4. Site operations to be carried out.
5. Accurate site sketch to include buildings, wells, tanks, surface waters, locations of sample points, etc.
6. List of samples - to include sample number, time of sample, sampler, sample location identifier.
7. Equipment field calibration results.
8. Observations pertinent to the description of the overall site.
9. Weather conditions/site conditions.

STANDARD PROCEDURE FOR DETERMINING LEVELS OF PROTECTION

This procedure describes the WAS standard method for determination of levels of protection to be utilized in site sampling operations.

This procedure identifies the four standard levels of personnel protection that may be used by MD WAS personnel during any site investigation. This procedure is extracted from the EPA-OERR-Hazardous Response Support Division's document "Standard Operating Safety Guides" published by USEPA 10/84.

1. Level D Protection
    a. Level D Protection is the lowest level of protection to be utilized. Level D Protection consists of coverall (or long-sleeved shirt and pants) steel-toed boots and hard hat.

b. This level is utilized in areas where there is no possibility of contact with environmental contaminants.

2. Level C Protection
   a. Level C Protection consists of a chemical resistant coverall, full face air purifying respirator, two layers of chemical resistant gloves, two layers of protective boots, hard hat, face shield, and duct tape to seal gloves, boot and coverall joints.
   b. Level C Protection should be used when the type and concentration of airborne contaminants is known or can be measured, and the oxygen concentrations are greater than 19.5%. Level C should not be used where there is a possibility of direct skin contact with materials.
3. Level B Protection
   a. Level B Protection consists of a pressure demand self-contained breathing apparatus (SCBA), chemical resistant "Saranex Tyvek" coverall with hood, two layers of chemical resistant gloves, two layers of protective boots, hard hat, and duct tape for sealing openings.
   b. Level B Protection shall be utilized when any of the following criteria are met:
      1. The type and concentration of toxic substances have been identified and require a high degree of respiratory protection, however, contaminant contact with the skin is not a primary concern.
      2. There is a possibility that the oxygen concentration in the work area is below 19.5%.
      3. Real time organic vapor meter (PID) measurement indicates "action" levels of unidentified vapors, however, vapors are not suspected of containing high levels of chemicals toxic to the skin.
      4. Work being done on-site will not generate continuous high levels of contaminant vapors, gases, or particulates (>500 ppm) nor will it generate splashes of material that could affect the skin of site personnel.
4. Level A Protection
   a. Level A Protection consists of a pressure demand self-contained breathing SCBA, fully encapsulating chemical-resistant suit, coverall, two layers of chemical resistant gloves, two layers of protective boots, hard hat (under suit).
   b. Level A Protection shall be utilized when any of the following criteria are met:
      1. The chemical substance has been identified and requires the highest level of protection for the skin, eyes, and respiratory system.
      2. Acutely hazardous substances are known or suspected to be present and skin contact might be possible.
      3. Real time vapor measurements indicate continuous high levels of unidentified substances (i.e. >500 ppm).

STANDARD PROCEDURES FOR PREPARATION OF FIELD BLANK AND DUPLICATES

This operating procedure describes the WAS standard method for preparing field blanks and duplicates.

The purpose of this operating procedure is to assure uniformity in field techniques and to serve as an indicator of sample contamination throughout the entire sampling and analysis process.

The following equipment is to be utilized for preparation of field blanks and duplicates: sample containers, label tape, waterproof marker, deionized distilled water.

Procedures to be followed for preparing field blanks and duplicates are:

Trip Blanks:

1. One working day prior to performing on-site sampling, submit 40 ml VOCs (a minimum of one trip blank - 2 vials - per day per site inspection) to the Division of Environmental Chemistry (MD DHMH, Labs Administration) for preparation of trip blanks. The Laboratory will fill the containers with distilled, deionized, contaminant-free water, which it has prepared. (This water was prepared by being passed through a filtration and finally reverse osmosis water purification unit. The water is then distilled daily to drive off any trace volatiles.) These trip blanks will be issued through chain of custody in the Laboratory to the field sampler. Alternatively, the trip blanks may be prepared by the Field Quality Control Manager or Site Project Manager.
2. Preserve the sample with hydrochloric acid to pH less than 2, and store in an insulated container with ice to a temperature less than 4° C.
3. Label and tag the containers as a trip blank sample and record all pertinent information in the field logbook.
4. Transport and store these trip blanks in the same manner as the site inspection samples but do not open them.
5. Maintain and document trip blank possession according to the Chain of Custody procedures in Section VI of the Quality Assurance Project Plan.
6. Submit the trip blanks with the site inspection samples to the appropriate laboratory for VOA analyses.

Field Blanks:

1. One working day prior to performing on-site sampling, obtain distilled, deionized, contaminant-free water from the Division of Environmental Chemistry (MD DHMH, Labs Administration). The water is stored in appropriate containers (currently 5-gallon carboys are used). Record all information concerning the water in the field logbook.
2. Transport and store this water in a manner to avoid contamination (e.g. away from fuel, preservatives, etc.). Currently, the carboys are stored in the Site Assessment Division Sampling Van, which remains locked.
3. Once in the field, fill one of each type of sample container for each type of matrix with the distilled, deionized, contaminant-free water from the laboratory. If appropriate, add the required preservatives to the container.
4. Label the containers to identify them as field blank samples and record all pertinent information in the field logbook.
5. Store and transport these field blanks in the same manner as the site inspection samples.
6. Maintain and document field blank possession according to the Chain of Custody procedures in Section VI of the Quality Assurance Project Plan.

7. Submit the field blanks with the site inspection samples to the appropriate laboratory for analyses required by the site sampling plan.

Duplicate Samples:

1. Duplicate samples will be collected at a frequency of one duplicate per 20 samples per matrix. Samples for duplicate analysis will be specified in the site-sampling plan.
2. Once the sample for duplication is determined, collect the sample according to the appropriate Standard Operating Procedure, splitting the sample matrix between two like container types. The duplicate sample must be collected from exactly the same location with the same collection apparatus as the actual sample. (For example, a scoop of soil should be equally split between two identical 8-ounce glass jars.) A duplicate sample should be collected using each container type and appropriate preservatives.
3. The duplicate samples should be labeled as any other sample so as not to bias the Laboratory's analysis. Record all pertinent information in the field logbook.
4. Store and transport these duplicate samples in the same manner as the site inspection samples.
5. Maintain and document duplicate sample possession according to the Chain of Custody procedures in Section VI of the Quality Assurance Project Plan.
6. Submit the duplicate samples with the site inspection samples to the appropriate laboratory for analyses required by the site-sampling plan.

STANDARD PROCEDURE FOR SOIL SAMPLING

This operating procedure describes the WAS standard method for the collection of representative samples of soils for physical and chemical analysis from a potential hazardous waste site.

The purpose of this operating procedure is to assure uniformity in technician field techniques so as to obtain accurate and reproducible data.

All equipment utilized in these methods must be adequately decontaminated prior to samples being taken.

Surface Soils Sampling Method:

The following equipment is to be utilized for obtaining surface soil samples: surveyor flags or stakes, stainless-steel sample trowel, stainless-steel scoops, stainless-steel bucket, sample containers with labels, waterproof markers, organic vapor meter, decontamination equipment.

Procedures for obtaining a representative surface soil sample are as follows:

1. Locate sample points as identified in the sampling plan for the individual site study.
2. Prepare sample containers according to the needs of the study.
3. Place homogenized grab soils in sample containers. Discrete samples should be taken for volatile organic analyses.

4. Record all pertinent information in the logbook. Pertinent information should include: site sketch, date, time, technicians, sample types, sample locations, description of site, weather conditions, soil type and consistency.
5. After samples have been obtained, the exterior of the sample containers should be rinsed with distilled water and dried with a clean cotton wiping cloth if excessively dirty.
6. Maintain and document sample possession according to the Chain of Custody Procedures in Section VI, of the Quality Assurance Project Plan.

Subsurface Soil Sampling Method:

The following equipment is to be utilized for obtaining subsurface soil samples: surveyors' flags or stakes, stainless-steel or chrome plated hand auger, stainless-steel bucket, stainless-steel trowel, stainless-steel scoops, 3'x3' plastic sheets, sample containers with labels, waterproof markers, organic vapor meter, decontamination equipment.

Procedures for obtaining representative subsurface soil samples are as follows:

1. Locate sample points as identified in the site specific sampling plan.
2. Determine sample depth intervals from the sampling plan.
3. Prepare sample containers according to the needs of the study.
4. Carefully advance the auger through the soils removing each auger of soil and reserving soil on plastic sheeting placed downgradient of the auger hole.
5. Monitor organic emissions from the borehole utilizing the organic vapor meter and record any readings and at depths encountered in the logbook.
6. Prior to sampling the strata of interest, decontaminate the auger. (See Standard Operating Procedure for Field Decontamination.)
7. Subsurface samples are to be obtained as per the site-sampling plan and at any other depths where contamination is encountered.
8. Record depths to the nearest foot of obvious contamination zones and make note of any changes in soil character and moisture content.
9. Following completion of auguring, decontaminate the auger. (See Standard Operating Procedure for Field Decontamination.)
10. If composited samples are required, composite in stainless steel bucket and transfer to sample containers as described in items 5-7 of aforementioned surface soil sampling method.
11. The exterior of the sample container should be rinsed with distilled water and dried with a clean wiping cloth if excessively dirty.
12. Maintain and document sample possession according to the Chain of Custody Procedures in Section VI of the Quality Assurance Project Plan.

STANDARD PROCEDURE FOR SURFACE WATER SAMPLING

This operating procedure describes the WAS standard method for the collection of a representative sample of surface waters in free flowing and/or open water bodies.

The purpose of this operating procedure is to assure quality control in field operations and to assure uniformity in technician field techniques so as to obtain accurate and reproducible data.

The following equipment is to be utilized for obtaining surface water samples: appropriate sample containers as detailed in the site sampling plan, label tape, distilled water, clean lint-free cotton wiping cloths, waterproof marking pens, bucket.

Procedures for obtaining a representative surface water sample are as follows:

1. Label container to identify sample station as outlined in the site-sampling plan.
2. Sampling is to begin at the furthest downstream point identified in the site-sampling plan.
3. Open container and fill, moving container in an upstream direction. Avoid strong agitation of the waters.
4. Fix samples as required and in accordance with the site sampling plan.
5. Close container, rinse with distilled water and dry with cloth if excessively dirty.
6. Record all pertinent field information in logbook (to include any in-situ measurements).
7. Samples are to be packed in ice and placed in cooler pending delivery to laboratory. Maintain and document sample possession according to the Chain of Custody Procedures in Section VI of the Quality Assurance Project Plan.
8. Proceed to next upstream station and repeat procedure.

STANDARD PROCEDURE FOR SUBAQUEOUS SEDIMENT SAMPLING

This operating procedure describes the WAS standard method for obtaining samples of sediments from subaqueous deposits.

The purpose of this operating procedure is to assure uniformity in technician field techniques so as to obtain accurate and reproducible data.

The following equipment is to be utilized for obtaining sediment samples: stainless-steel scoop, stainless-steel bucket, sample containers, label tape and waterproof markers.

Procedures for obtaining samples of subaqueous sediments are as follows:

1. Proceed to the farthest downstream sample location as determined in the site sampling plan. (In a free-flowing stream, samples should be obtained from pooled areas where settling of particulates will have occurred.)
2. Move the scoop in an upstream direction to obtain sample.
3. Transfer sample directly into sample containers.
4. Allow fine materials to settle in the container and then decant liquid off top of sample as necessary, being careful to retain fine sediments.
5. Clean exterior of containers with distilled water and pack for transport to laboratory.
6. Proceed to the next upstream station and repeat steps until uppermost station has been completed.
7. Maintain and document sample possession according to the Chain of Custody Procedures in Section VI of the Quality Assurance Project Plan.

STANDARD PROCEDURE FOR GROUNDWATER MONITORING WELL SAMPLING

This operating procedure describes the WAS standard method for the collection of representative samples of groundwater from nonpotable monitoring wells.

The purpose of this operating procedure is to assure uniformity in technician field techniques so as to obtain accurate and reproducible data.

The following equipment is to be utilized for obtaining groundwater monitoring well samples: weighted tape measure, organic vapor meter, flashlight and/or mirror, teflon bailer(s), dedicated or disposable bailer line, decontamination equipment, purge device (bailer, submersible pump, bladder pump, etc.), 5-gallon bucket, sample containers, label tape, waterproof marker, filtering equipment (See Standard Operating Procedure for Filtering Groundwater for Metals Analysis), pH meter, and specific conductance meter.

Procedures for obtaining representative groundwater samples are as follows:

A. Preliminary Inspection Phase

1. Inspect the condition of the monitoring well and record all pertinent information in the field logbook. This information includes: well ID number, the casing height above ground, soundness of protective casing, and effectiveness of surface grout seal.
2. Position the organic vapor meter near the well cap so as to measure any organic vapors emanating from the well and to evaluate the safety level.
3. Remove well cap and note organic vapor meter response. Record readings in logbook.
4. Use flashlight and/or mirror to inspect the interior of the well. Record all observations in the logbook.
5. Measure the depth to the water's surface from the top of the casing using the weighted tape measure. Record this depth to the nearest one-hundredth of a foot.
6. Measure the depth to the bottom of the well from the top of the casing using the weighted tape measure. Record this depth to the nearest one-hundredth of a foot.

B. Evacuation Phase

1. Using the following formula, calculate the total gallons of water required to evacuate three well volumes of water from the monitoring well.
   Depth to Bottom of Well Minus (-) Depth to Water Times (x) *Well Diameter Factor* Equals (=) Number of Gallons Which Should be Evacuated.
   Well diameter Factor is the number of gallons to purge for 3 well volumes.

Well Diameter (inches)	*Well Diameter Factor*
2	0.5
3	1
4	2

(e.g. a four inch diameter well, 60 feet total depth with water level at 35 feet would have 25 feet of standing water and would require 50 gallons (25 x 2 gallons/foot) be purged before a sample could be collected.)

2. To purge the standing water, the pump needs to be set at a position between the water surface and five feet above the well screen. Once the water within the casing is purged, the pump should be lowered just above the well screen to withdraw groundwater from the aquifer. Measure the total amount of water discharged using a five gallon bucket and continue to pump and measure until the desired amount of water has been purged from the well.
3. When using a bailer to purge the monitoring well, measure the amount of water withdrawn from the well using a five-gallon bucket until the desired volume of water is purged from the well.
4. If the well purges dry and does not recharge in a reasonable amount of time, bail or pump dry again to withdraw at least two well volumes before sampling the well after recharge has occurred, which may require sample collection on the following day.
5. If purged groundwater is known or suspected to possess hazardous characteristics or contaminants, the purged water must be collected for storage and proper disposal. (Otherwise, purged water must be discharged at least 25 feet downgradient of the well.)

C. Sampling Phase

1. Remove a bail of water from the well and measure the pH and specific conductance. Record time, temperature, pH and specific conductance in field log book.
2. Carefully lower the teflon bailer into the well so as not to disturb the water. Gently lift the bailer and fill the sample bottles as required by the site-sampling plan in the following order:
   a. (2) 40 ml glass VOCs;
   b. Amber glass liter extractable jars (organic extractables);
   c. Amber glass gallon jugs (pesticides and PCBs);
   d. Liter poly container (metals);
   e. Glass liter jars (oil and grease).

   Fix samples as required in Section V, Laboratory and Field Integration, Appendix A, Hazardous Waste Laboratory Quality Assurance Document.
3. Filter samples for metals analysis according to Standard Operating Procedure.
4. Thoroughly decontaminate all equipment and properly dispose of all contaminated materials. (See Standard Operating Procedure for Field Decontamination.)
5. Maintain and document sample possession according to the Chain of Custody Procedures in Section VI of the Quality Assurance Project Plan.

STANDARD OPERATING PROCEDURE FOR FILTERING GROUNDWATER FOR METALS ANALYSIS

This operating procedure describes the WAS standard method for filtering groundwater obtained from monitoring wells for analysis of dissolved metal concentrations.

The purpose of this operating procedure is to assure uniformity in field techniques so as to obtain accurate and reproducible data.

The following equipment is to be utilized for filtering groundwater: sample containers, label tape, waterproof marker, vacuum pump, plastic tubing, filter assembly, 0.45 μm micropore filters.

Procedures for filtering groundwater are as follows:

1. After filling all other required sample containers at the well sampling location, collect a one-liter sample of water in a polyethylene container without preservation.
2. Assemble the filtration apparatus, using surgical gloves and tweezers to place a 0.45 μm micropore filter on the lower filter assembly so that it lays flat on the unit. Carefully connect the upper and lower units of the filter assembly.
3. Connect the pump, tubing, and filter assembly. Operate the pump to create a vacuum on the system to draw water from the sample bottle through the assembly into a clean poly bottle. If the filter becomes clogged, release the vacuum, replace the filter, and then resume filtering as before.
4. Once the entire 1-L volume of water collected at the sample location has been filtered, then preserve the filtered water. Add concentrated nitric acid to the filtered water until the pH is less than 2, and record the amount of acid required.
5. Disconnect the filter assembly. Dispose of the used filter and rinse the entire assembly with dilute nitric acid solution. This includes running approximately 20 - 30 ml of dilute acid through the tubing using the pump vacuum. Follow this with at least two rinses of DI water, including running about 100 ml of DI water though the tubing.
6. Record all pertinent information in the field logbook.
7. Maintain and document sample possession according to the Chain of Custody procedures.

STANDARD OPERATING PROCEDURE FOR RESIDENTIAL WELL SAMPLING

This operating procedure describes the WAS standard method for the collection of representative samples of groundwater from residential potable-water wells.

The purpose of this operating procedure is to assure uniformity in technician field techniques so as to obtain accurate and reproducible data.

The following equipment is to be utilized for obtaining residential well samples: sample containers, label tape, waterproof marker, pH meter, specific conductance meter.

Procedures for obtaining a representative residential well sample are as follows:

1. Obtain as much information about the well and the plumbing system as possible from the homeowner and from observation. This information could include: location, well tag number, age of the well, construction of the well, depth of the well, well driller, well completion report, location of possible sources of contamination (septic systems, fuel tanks, barn yards, etc), location of other wells, type of plumbing in the house, location of water treatment devices, history of taste and/or odor problems, etc. Record all of this information in the field logbook.
2. Select a faucet for sampling as close to the water well outlet as possible. Water treatment devices should be bypassed while collecting the sample.
3. Utilizing the cold water line, purge the water line of standing water by letting the water run for at least 10 - 20 minutes, depending upon the amount of water used by the resident prior to the sampling visit, depth of the well, and distance from the house.
4. Following purge time, remove any aerators from the faucet and decrease the water flow to reduce turbulence while collecting the samples.
5. Collect a sample, which can be used to determine field parameters for pH, specific conductance, and temperature. Obtain pH and specific conductance readings according to Standard Operating Procedure. Record this information, as well as purge time, in the field logbook.
6. Collect the samples and add preservatives as required by the site-sampling plan. Refer to Section V, Laboratory and Field Integration, Appendix A, Division of Environmental Chemistry (MD DHMH, Labs Administration) Quality Assurance Document for information regarding sample containers and preservatives.
7. Maintain and document sample possession according to the Chain of Custody Procedures in Section VI of the Quality Assurance Project Plan.

STANDARD OPERATING PROCEDURE FOR FIELD DECONTAMINATION

This operating procedure describes the WAS standard method for decontaminating equipment utilized in environmental sampling of potentially hazardous materials.

Specialized equipment required for this procedure would include the following: distilled water, stainless-steel pressure sprayer, 5-gallon stainless-steel bucket, Alconox, bristle scrub brush, long handled bottle brush, aluminum foil, paper towels, disposable bags, plastic sheeting.

Decontamination Procedures:

1. Using distilled water in the pressure sprayer, thoroughly wash dirt, mud or particulate material off equipment.
2. Mix decon solution of Alconox (or Liquinox) in bucket with distilled water, 1 gallon of water to 1 cup detergent. Thoroughly wash and scrub equipment.
3. Rinse equipment three times with distilled water and dry with paper towels.
4. Wrap the decontaminated equipment in aluminum foil and store for next sample program.
5. Dispose of contaminated water and equipment in accordance with Federal/State Regulations.

ORIGINAL

CLP EVENT CHECKLIST

Office >>> Sample Van

- [ ] Sample Bottles
- [ ] Extra Sample Bottles
- [ ] Chain of Custody/Traffic Reports
- [ ] Extra Chain of Custody/Traffic Reports
- [ ] Tags
- [ ] Extra Tags
- [ ] Custody Seals ____Signed
- [ ] Sharpies
- [ ] Extra EPA Labels (white sticker labels)
- [ ] Extra Waterproof Labels

Sample Van

- [ ] Deionized Water
- [ ] HCL Acid
- [ ] HNO3 Acid
- [ ] NaOH Base
- [ ] Disposable Filters for Metals
- [ ] Pipets
- [ ] Cups
- [ ] Disposable Scoops
- [ ] Scoopulas
- [ ] pH Paper
- [ ] Conductivity Meter ____Charged?
- [ ] Microtip Meter/Radiation Detector
- [ ] Check Generator
- [ ] Encore Samplers/Syringe Samplers
- [ ] Buckets/Brushes/Bottle Brushes
- [ ] Gloves (inner and outer)
- [ ] Buckets/Brushes/Bottle Brushes
- [ ] Liquinox/Sprayer
- [ ] Augers/Shovels/Trowels
- [ ] Plastic Sheeting
- [ ] Disposable Bailers/Nylon Rope
- [ ] Peristalic Pump/Tubing
- [ ] Drums
- [ ] 100' Tape Measure
- [ ] Notebooks
- [ ] Well Surveys
- [ ] Permission Forms
- [ ] VOA Samplers

- [ ] Tyveks
- [ ] Respirators
- [ ] Steel-Toe Boots
- [ ] Rubber Boots
- [ ] Waders
- [ ] Eye Protection
- [ ] Flashlights
- [ ] Paper Towels
- [ ] Trash Bags
- [ ] Emergency Phone Numbers
- [ ] Insect Repellent
- [ ] First Aid Kit

Shipping Supplies

- [ ] Fed Ex Forms
- [ ] Address Labels
- [ ] Return Address Labels
- [ ] Cooler bags (for lining coolers ~ 30 gal)
- [ ] Coolers
- [ ] Gallon Zip-Lock Bags (paperwork)
- [ ] Small Zip-Lock Bags (ice)
- [ ] Produce bags
- [ ] Whirlpacs
- [ ] Vermiculite
- [ ] Duct/Clear/Scotch Tape
- [ ] Scissors/Utility Knife
- [ ] Bubble wrap
- [ ]
- [ ] Camera ____Charged
- [ ] Radios
- [ ] Phones
- [ ] Beepers
- [ ] Ice
- [ ] Drinks
- [ ]
- [ ] Printer ____Cartridges/Extras
- [ ] Laptop
- [ ] Colored Paper (Blue, Green, Pink, Yellow)
- [ ] 12v Power Converter
- [ ]